RAS 15162

JON S. CORZINE
Governor

State of New Jersey
OFFICE OF THE ATTORNEY GENERAL
DEPARTMENT OF LAW AND PUBLIC SAFETY
DIVISION OF LAW
25 MARKET STREET
PO BOX 093
TRENTON, NJ 08625-0093

ANNE MILGRAM
Attorney General

ROBERT J. GILSON
Director

July 10, 2008

via email and first class mail
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attention: Rulemakings and Adjudications Staff

Re: Shieldalloy Metallurgical Corp.
Licensing Amendment Request for Decommissioning the
Newfield, New Jersey Facility
Docket No. 40-7102-MLA

Dear Secretary:

Enclosed for filing please find the State of New Jersey's reply to the July 3, 2008 NRC Staff and Shieldalloy Metallurgical Corp. submissions to the Commission.

Sincerely yours,

ANNE MILGRAM
ATTORNEY GENERAL OF NEW JERSEY

By: Andrew Reese
Andrew D. Reese
Deputy Attorney General

Encl.
cc: service list

HUGHES JUSTICE COMPLEX • TELEPHONE: (609) 292-1509 • FAX: (609) 341-5031

TEMPLATE = SECY-035

DS 03

July 10, 2008

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
SHIELDALLOY METALLURGICAL CORP.	)	Docket No. 40-7102-MLA
	)	
	)	
(Licensing Amendment Request for Decommissioning the Newfield, New Jersey Facility)	)	

STATE OF NEW JERSEY'S REPLY TO THE JULY 3, 2008 NRC STAFF AND SHIELDALLOY SUBMISSIONS TO THE COMMISSION

The State of New Jersey respectfully submits this reply to the July 3, 2008 NRC Staff and Shieldalloy Metallurgical Corp. submissions to the Commission. The State fully agrees with the conclusion set forth in the Atomic Safety & Licensing Board's ("ASLB") June 2, 2008 Memorandum that the more than decade-long delay in concluding the decommissioning process at the Shieldalloy site is "unacceptable." The Commission should uphold this conclusion and establish a deadline for Shieldalloy to submit an acceptable decommissioning plan. If Shieldalloy misses the deadline or fails to submit an acceptable decommissioning plan that requires no additional Requests for Additional Information ("RAI"), it should be required to submit a plan for off-site disposal with a deadline to submit the off-site disposal plan. Second, the

Commission should require Shieldalloy and the NRC Staff to develop a plan to prevent the ongoing contamination to the Hudson Branch Creek or to demonstrate that there is no ongoing contamination, to adequately characterize the Creek, and to remediate the contamination that was documented in 1992 (Assessment of Environmental Radiological Conditions at the Newfield Facility, IT Corporation, April 9, 1992, Appendix M and N) with results up to 77 pCi/g of Ra-226 outside the property line.

A. UNREASONABLE DELAY

The NRC Staff and Shieldalloy provide no reasonable justification for Shieldalloy's failure to submit an acceptable decommissioning plan since ceasing operations in 1998. After the submission of three revisions of a decommissioning plan, Shieldalloy has still not submitted an acceptable plan. Shieldalloy's most recent decommissioning plan proposal resulted in 14 environmental RAIs and 73 Safety RAIs being issued to Shieldalloy. (NRC at 12)[1]. In fact, Shieldalloy continues to provide deficient submissions by providing only a partial response to the NRC Staff's 73 safety RAIs. Id. A perusal of the RAIs demonstrate that very basic components of the DP, that did not need

[1] "(NRC)" refers to the "NRC Staff's Response to LBP-08-08," dated July 3, 2008.

to wait for any policy decisions by the Commission, are still missing, such as characterization of the radionuclides in the slag (RAI No. 7), volumes of contaminated materials proposed for consolidation (RAI No. 8), characterization of the contamination in the Hudson Branch (RAI No. 9), data requirements for uncharacterized areas of the site outside the storage yard (RAI Nos. 10 and 57), confusion over Kds (RAI No. 18), and the list goes on. To be in the third revision of a DP and still not have the source term adequately characterized is unacceptable. To blame the delay solely on technicalities related to leach rate testing and Commission policy documents is misleading. To date, the additional testing required to adequately characterize the slag/baghouse dust/debris pile is not estimated to be completed until September 2008. (ADAMS ML073321281). Because the site and source material characterization determines the modeling, ALARA analysis, and manner of disposal, Shieldalloy should have adequately characterized its site and source material prior to submitting its first decommissioning plan in November 2002. The NRC Staff has gone well beyond the call of duty by allowing Shieldalloy this much time to complete a decommissioning plan. Shieldalloy's continuing failure to adequately characterize its waste and to submit an adequate decommissioning plan demonstrates that it has been anything but diligent in decommissioning its site.

In its submission to the Commission, Shieldalloy attempts

to blame the State of New Jersey for Shieldalloy's 10-year delay in proposing an adequate decommissioning plan by arguing that the State should have agreed to take responsibility for Shieldalloy's permanent on-site disposal of its radioactive waste just as the State of Ohio did at their Cambridge facility. (Shieldalloy at 6-7). Shieldalloy neglects to mention that Ohio became an Agreement State during the Cambridge decommissioning, and thus assumed authority over the whole process. It is the licensee's responsibility to decommission a site. Furthermore, the State's decision on the issue of whether to take responsibility for the site is, of course, unrelated to Shieldalloy's failure after so many years to even adequately characterize the site and slag/baghouse dust/debris pile, and is unrelated to Shieldalloy's submission of a decommissioning plan which is still grossly technically and environmentally flawed on its third try. Shieldalloy's decommissioning plan presents flawed modeling and ALARA analysis that prevents the NRC from being able to adequately assess the plan.

Shieldalloy fails to mention that when it requested that the State agree to take responsibility for the on-site disposal, the State responded by requesting additional information. Yet, Shieldalloy refused to provide the requested information. Shieldalloy also fails to mention that neither the U.S. Department of Energy, the lead federal agency for oversight of legacy sites,

nor any local governmental entity has agreed to take responsibility for the on-site disposal. Finally, Shieldalloy fails to acknowledge that if it had proposed off-site disposal initially, decommissioning could have been completed years ago. There is an active railroad line which goes right by the site. Shieldalloy utilized this railroad line to ship thousands of tons of ferrovanadium slag off-site. The ferrovanadium slag was stored in an area adjacent to the ferrocolumbium slag and baghouse dust now at issue. Based upon data submitted so far, most of licensed contaminated material is consolidated in above-ground locations making it easily accessible for transport off site. As much as Shieldalloy and the NRC staff would like portray this site as complex, based on what we know from the incomplete characterization of the site and surrounding areas, it is as the ASLB says, "nothing more than a slag pile."

Shieldalloy suggests that the 1997 bankruptcy settlement agreement contemplated decommissioning based on the on-site disposal of its waste. The bankruptcy agreement plainly does not authorize any method of decommissioning. In fact, Commissioner Merrifield addressed this very issue in his letter to Shieldalloy dated February 22, 2007. (Attached as Exhibit 1). Commissioner Merrifield quoted various terms of the agreement which demonstrate that it was not an approval of any particular method of decommissioning. The bankruptcy settlement states that it does not

constitute a release from any state or federal liability to clean up or remediate any condition at Newfield. The bankruptcy settlement also provides that Shieldalloy's environmental obligations passed through the bankruptcy. The only claims settled in the bankruptcy are penalty claims.

The NRC Staff concedes that its future review of the decommissioning plan will likely be delayed even further:

> Because Shieldalloy continues to finalize these protocols, the Staff will likely need to further revise the estimated release dates for documents associated with the technical review.[40]
>
> . . .
>
> [40]Tadesse Affidavit at ¶ 14. The Staff also cannot rule out the possibility that it will need to transmit a limited number of additional RAIs involving issues other than leach rate testing.

(NRC at 14, n.40).

The unreasonable and continuing delays necessitates that the Commission impose a deadline upon Shieldalloy to submit an acceptable decommissioning plan. If Shieldalloy misses the deadline or fails to submit an acceptable decommissioning plan, i.e. one which will have no additional RAIs, it should be required to submit a plan for off-site disposal with a deadline to submit the off-site disposal plan.

B. INTERIM PROTECTIVE MEASURES

The NRC Staff and Shieldalloy argue that no interim protective measures are necessary at the site since there have been no releases of radioactivity off-site and there are no current threats to public health or safety. (NRC at 6; Shieldalloy at 17). However, the NRC Staff and Shieldalloy ignore Shieldalloy's own sampling results along the Hudson Branch Creek's surface water and soil sediment, which show elevated levels of uranium-238, thorium-232 and radium 226 that violate either surface water standards, soil remediation standards, or both (attached as Exhibit 2). To date, the Hudson Branch Creek has not been adequately characterized since the sample taken farthest from the property line still contained elevated levels of combined radium-226 and -228 and thorium-232. (See Exhibit 2 attached).

Both Shieldalloy and the NRC staff point to the berm that was constructed on the south side of the storage area as a protective measure, however this berm does not surround the entire pile. There are materials other than slag present in the pile such as construction debris and contaminated soil that could potentially leave the site via runoff. Shieldalloy should demonstrate that runoff to the north, east, and west has not contaminated offsite locations by thoroughly characterizing the soil and any surface water outside the fence-line.

New Jersey agrees with the staff's assessment that

requiring an interim protective barrier over the slag/baghouse dust/contaminated debris pile like the one contemplated in the DP may prolong and complicate decommissioning. Not only might Shieldalloy consider changing its decommissioning approach as the staff points out (page 18), but the final EIS might determine that the current approach is not acceptable and that offsite disposal is the appropriate action. When such a decision is made, the State would like removal to begin as soon as possible. However, the Staff and Shieldalloy should analyze other interim measures to prevent any ongoing contamination until the final decommissioning is completed.

New Jersey is concerned with offsite contamination and exposure and objects to Shieldalloy's characterization of the slag and baghouse dust as containing small amounts of uranium and thorium. The concentration of radionuclides in the slag is over two orders of magnitude greater than background. The gamma exposure rate at one portion of the slag was measured at 3 milliRoentgen (mR) per hour on contact which is three orders of magnitude over background. New Jersey does not consider this a "small amount". Contrary to Shieldalloy's claim, the 720 hours needed to exceed the dose limit specified in 10 CFR 20.1301(a)(1) need not be consecutive. This level of occupancy is about eight percent, well within a reasonably forseeable residential scenario for time spent outdoors (The default value for outdoor occupancy in

RESRAD is 25% which would result in over twice the public dose limit). This is not to say that New Jersey believes that the public dose limit has been exceeded at this site, but to point out that this exposure rate is not insignificant.

Therefore, the Commission should require (1) the adequate characterization of the Hudson Branch Creek; (2) the investigation of the source of this contamination; (3) the development and implementation of a plan to prevent the ongoing contamination; and (4) the remediation of the contamination.

Respectfully submitted,

ANNE MILGRAM
ATTORNEY GENERAL OF NEW JERSEY

Dated: 7/10/08

By: Andrew Reese
ANDREW D. REESE
Deputy Attorney General

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
SHIELDALLOY METALLURGICAL CORP.	)	Docket No. 40-7102-MLA
	)	
(Licensing Amendment Request for	)	
Decommissioning of the	)	
Newfield, New Jersey Facility)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the State of New Jersey's reply to the July 3, 2008 NRC Staff and Shieldalloy Metallurgical Corp. submissions to the Commission. have been served upon the following persons by deposit of paper copies in the U.S. mail, first class, and where indicated by an asterisk be electronic mail, this 10th day of July 2008.

Alan S. Rosenthal, Chair*
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
rsnth@comcast.net

William Reed *
Administrative Judge
Atomic Safety and Licensing Board Panel
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
whrcville@embarqmail.com

Richard E. Wardell *
Administrative Judge
Atomic Safety and Licensing Board Panel
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
richard.wardwell@nrc.gov

Adjudicatory File
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Mail Stop: T-3 F23
Washington, D.C. 20555

Office of Commission Appellate Adjudication*
U.S. Nuclear Regulatory Commission
Mail Stop O-16 C1
Washington, D.C. 20555-0001
OCAAmail@nrc.gov

Office of the Secretary*
Attn: Rulemaking and Adjudications Staff
U.S. Nuclear Regulatory Commission
Mail Stop: O-16 C1
Washington, D.C. 20555
hearingdocket@nrc.gov

SherVerne R. Cloyd*
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Mail Stop T -3 F23
Washington, D.C. 20555-0001
sherverne.cloyd@nrc.gov

Jay E. Silberg, Esq. *
R. Budd Haemer, *
Matias F. Travieso-Diaz, Esq. *
Pillsbury Winthrop Shaw Pittman LLP
2300 N Street, N.W.
Washington, DC 20037-1128
jay.silberg@pillsburylaw.com;
matias.travieso-diaz@pillsubylaw.com;
robert.haemer@pillsburylaw.com

Johanna Thibault, Law Clerk *
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
johanna.thibault@nrc.gov

Andrew Reese

Andrew D. Reese
Deputy Attorney General

Date: 7/10/08

EXHIBIT 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

COMMISSIONER

February 22, 2007

Eric E. Jackson, President
Shieldalloy Metallurgical Corporation
435 Devon Park Drive
Bldg. 400
Wayne, PA 19087

Dear Mr. Jackson:

Thank you very much for taking the time to present information to me regarding your facility in Newfield, New Jersey, and the tour of the facility. I found the tour very informative. I understood you to say during your presentation that you believed the "Settlement Agreement of Environmental Claims and Issues By and Between Debtors and the United States of America and the State of New Jersey," was a binding document in which the NRC had agreed both that the slag pile could be left onsite, and that the cost to the company of decommissioning would not exceed 5 million dollars. This statement has been widely repeated in the press as well.

Since returning to my office, I have reviewed the settlement agreement, which is Appendix K of your decommissioning plan. I do not agree with your characterization of the content of the settlement agreement. I would particularly commend to you the following paragraphs.

A. "Shieldalloy and the United States have agreed that for purposes of determining financial assurance only, the dollar amounts assigned to each of the Environmental Projects are as follows: . ... NRC Slag Pile Remediation 5.0." Page 19, Paragraph 14.

B. "It is agreed and understood that the Predetermined Costs as identified in paragraph 14 of this Settlement Agreement in no way constitute a cap or limitation on Shieldalloy's continuing obligations to comply with state and federal environmental laws or with the NJ ACO." Page 34, Paragraph 40.

C. "Nothing in this Settlement Agreement shall release Shieldalloy or a subsequent owner or operator of the Newfield or Cambridge sites from complying with applicable state and federal environmental laws." Page 35, Paragraph 43.

D. "Nothing in this Settlement Agreement shall be construed to affect the NRC's regulatory authority over the Newfield site or the Cambridge site, including, but not limited to, the NRC's authority relating to the decommissioning of the Sites, and the NRC's authority to require Shieldalloy to post separate financial assurance, above and beyond the amounts set forth in this Settlement Agreement." Page 37-38, Paragraph 50.

The NRC currently has before it your proposed decommissioning plan. The NRC will, in accordance with its regulatory responsibilities, review the plan and determine whether or not it is acceptable.

Finally, as I stated during my visit, I would encourage further dialogue between your staff and the other interested parties to determine if there are other options, in addition to onsite decommissioning, that may be able to resolve the final cleanup and reuse of this site in a cost effective way.

Sincerely,

Jeffrey S. Merrifield

cc: Parties to the Proceeding
Congressman Frank A. LoBiondo
Congressman Robert E. Andrews
Senator Robert Menendez
Senator Frank R. Lautenberg

EXHIBIT 2

STUART RABNER
ATTORNEY GENERAL OF NEW JERSEY
R.J. Hughes Justice Complex
25 Market Street
P.O. Box 093
Trenton, New Jersey 08625-0093
Attorney for Plaintiff,

By: Andrew Reese
Deputy Attorney General
(609) 292-1509

UNITED STATE COURT OF APPEALS
FOR THE THIRD CIRCUIT
DOCKET NO. 06-5140

STATE OF NEW JERSEY,)
)
Petitioner,)
v.)
UNITED STATES NUCLEAR)
REGULATORY COMMISSION)
and UNITED STATES OF)
AMERICA,)
Respondents.)

I, JENNIFER GOODMAN, hereby declare as follows:

1. Attached please find my resume, which is incorporated into this Declaration by reference.

2. Shieldalloy is currently storing approximately 65,000 m^3 of radioactive waste outside at its facility without any cover. This storage area is adjacent to the nearby Hudson Branch Creek. Shieldalloy's own sampling results of surface water, run-off, soil, and/or sediment in the creek for uranium-238, thorium-232 and radium-226 show levels which violate either surface water

standards, soil remediation standards, or both. A true copy of the results of this sampling is attached in the Maps numbered 6, 7, and 8. These sampling results included on Maps numbered 6,7,and 8 are taken from Shieldalloy's decommissioning plan, Appendix 19.9 Environmental Report, Sub-Appendix B. On the attached map the waste disposal area is within the grid AA45 on the northwest, grid H45 on the southwest, grid H72 on the southeast and grid S72 on the northeast.

3. The surface water standard for combined radium-226 and radium-228 is 5 picocuries per liter (pCi/L). N.J.A.C. 7:9B-1.14 (c) (referencing 40 C.F.R. §141.66 (b)). Shieldalloy's own water samples from the Hudson Branch Creek of just radium-226 show levels that exceed this standard, including results of 33.1 pCi/L and 15.2 pCi/L. See Map 8. The state soil remediation standard for radium-226 is 3 pCi/L. N.J.A.C. 7:28-12.9. However, Shieldalloy's sediment or soil samples along the creek's bed show levels well above the standard, including a result of 77 pCi/g taken from the beginning of Shieldalloy's property line and a result of 17 pCi/g taken farthest away from the property line. See Map 8.

4. The surface water standard for uranium-238 is 30 ug/L. N.J.A.C. 7:9B-1.14(c) (referencing 40 C.F.R. §141.66(e)). Shieldalloy's water sample from the edge of the disposal area, shows uranium

exceeding this standard, with a result of 52 ug/L (after converting U-238 to total uranium). See Map 6.

5. New Jersey's soil remediation standard for thorium-232 is 2 pCi/g. N.J.A.C. 7:28-12.9. However, Shieldalloy's soil or sediment samples for thorium-232 show results along the creek's bed exceeding the standard, including a result of 4.94 pCi/g taken at the beginning of Shieldalloy's property line and a result of 2.61 pCi/g taken farthest away from the property line. See Map 7. A result of 9.8 pCi/g was also found for thorium-232. See id.

I declare that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

DATE: 2/21/07

Jennifer Goodman

Jennifer Goodman

Jennifer Goodman
34 Cedar Lane
Princeton, NJ 08540
(609) 984-5498
jenny.goodman@dep.state.nj.us

EDUCATION

Rutgers University Graduate School, New Brunswick, NJ
MS Radiation Science, October, 1987
Institute of Nuclear Power Operators (INPO) Fellowship recipient

Cook College (Rutgers University), New Brunswick, NJ
BS Biochemistry, 1980

EXPERIENCE

US Environmental Protection Agency, Region 2, New York, NY
1984-85, Emergency Planning, Member of Radiological Assistance Committee

NJ Department of Environmental Protection, Trenton, NJ
1985-88, Bureau of Nuclear Engineering, Coordinated nuclear power plant emergency exercises, wrote standard operating procedures, designed and supervised construction of the Emergency Laboratory Facility.
1988-92, Bureau of Environmental Radiation, Supervised Radon Section, responsible for implementation of radon certification regulations.
1992-Present, Bureau of Environmental Radiation, Supervise Radiological Assessment Section
Responsible for reviewing characterization, remediation and final status survey plans for sites contaminated with radioactive materials. Sites include mineral extraction industries, former Manhattan Engineering District sites (nuclear weapons production), military bases, and manufacturing operations. Part of a team that developed cleanup standards for naturally occurring radioactive materials. Developed and promulgated a regulation for soil remediation standards for radioactive materials. Assist the Bureau of Safe Drinking Water with radionuclides in drinking water issues including occurrence, treatment, waste management, health effects, and costs. Assisted the NJ Drinking Water Quality Institute in developing a standard for Ra-224, currently assisting with development of radon in water standard.

COMMITTEES

Member of the Interagency Steering Committee on Radiation Standards Sewage Sludge Subcommittee
Member of National Council on Radiation Protection and Measurements *Scientific Committee 6-2.*
Coordinator, CRCPD E-35 committee on MARSSIM/MARSAME

REPORTS

New Jersey Drinking Water Quality Institute Report on Radium-224
Health Effects Subcommittee, November 2001
Radon in Air Investigation of the Pequest Trout Hatchery, Mansfield,

Liberty, and White Townships, Warren County, 2004
Investigation of Charlotte Uranium Mine, Byram Township, Sussex County, February 2004
ISCORS Assessment of Radioactivity in Sewage Sludge:
Radiological Survey Results and Analysis, November 2003
Modeling to Assess Radiation Doses, February 2005
Recommendations on Management of Radioactive Materials in Sewage Sludge and Ash at Publicly Owned Treatment Works, February 2005
A Study of Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) at a New Jersey POTW, January 2005
A Review of "Understanding Patterns and Trends of Radioactive Strontium-90 in Baby Teeth of New Jersey Children with Cancer: A Report to the New Jersey State Department of Health and Senior Services", September, 2005

PUBLICATIONS

Amidon, T., Stern, R., and Goodman, J., *A Pathways Analysis Approach to Developing Remediation Standards for Radioactively Contaminated Soils*, in Contaminated Soils, Volume 4, Kostecki, P. and Calabrese, E. editors, 1999.
Goodman, J., New Jersey and MARSSIM: Perfect Together (Well, Almost). *Health Physics*. 84(6) Supplement 3, June 2003
Bastian, R. et al, Radioactive Materials in Biosolids: National Survey, Dose Modeling, and Publicly Owned Treatment Works (POTW) Guidance, *Journal of Environmental Quality* 34:64-74, 2005.
Wolbarst, A.B.et al, Radioactive Material in Biosoilds: Dose Modeling. *Health Physics*. 90(1), January 2006

PRESENTATIONS

Ingestion Pathway Planning in NJ and the Impact on a State Radiation Laboratory, Health Physics Society, Boston, MA, July, 1988.
Implementation of NJ Soil Remediation Standards for Radioactively Contaminated Sites, Health Physics Society, Philadelphia, PA, June, 1999.
ISCORS Update on Sewage Sludge, Conference of Radiation Control Program Directors Mid-Atlantic Meeting, Atlantic City, NJ, October, 2003
Cleaning Up the BOMARC Site, from Missile Maidens to MARSSIM NJ Chapter of the Health Physics Society, March, 2005
Implementation of ISCORS Guidance Documents: New Jersey's Experience, ISCORS Principals, Washington D.C., March 2005

AWARDS

Appreciation Award in Recognition of Outstanding Achievement as a member of the Tom's River Working Group, June 1999
Professional Achievement Award for assistance to the Drinking Water Quality Institute in developing a Radium-224 in water standard, April, 2003

REFERENCES

Available upon request

Jennifer Goodman
34 Cedar Lane
Princeton, NJ 08540
(609) 984-5498
jenny.goodman@dep.state.nj.us

EDUCATION

Rutgers University Graduate School, New Brunswick, NJ
MS Radiation Science, October, 1987
Institute of Nuclear Power Operators (INPO) Fellowship recipient

Cook College (Rutgers University), New Brunswick, NJ
BS Biochemistry, 1980

EXPERIENCE

US Environmental Protection Agency, Region 2, New York, NY
1984-85, Emergency Planning, Member of Radiological Assistance Committee

NJ Department of Environmental Protection, Trenton, NJ
1985-88, Bureau of Nuclear Engineering, Coordinated nuclear power plant emergency exercises, wrote standard operating procedures, designed and supervised construction of the Emergency Laboratory Facility.
1988-92, Bureau of Environmental Radiation, Supervised Radon Section, responsible for implementation of radon certification regulations.
1992-Present, Bureau of Environmental Radiation, Supervise Radiological Assessment Section
Responsible for reviewing characterization, remediation and final status survey plans for sites contaminated with radioactive materials. Sites include mineral extraction industries, former Manhattan Engineering District sites (nuclear weapons production), military bases, and manufacturing operations. Part of a team that developed cleanup standards for naturally occurring radioactive materials. Developed and promulgated a regulation for soil remediation standards for radioactive materials. Assist the Bureau of Safe Drinking Water with radionuclides in drinking water issues including occurrence, treatment, waste management, health effects, and costs. Assisted the NJ Drinking Water Quality Institute in developing a standard for Ra-224, currently assisting with development of radon in water standard.

COMMITTEES

Member of the Interagency Steering Committee on Radiation Standards Sewage Sludge Subcommittee
Member of National Council on Radiation Protection and Measurements Scientific Committee 6-2.
Coordinator, CRCPD E-35 committee on MARSSIM/MARSAME

REPORTS

New Jersey Drinking Water Quality Institute Report on Radium-224
Health Effects Subcommittee, November 2001
Radon in Air Investigation of the Pequest Trout Hatchery, Mansfield,

Liberty, and White Townships, Warren County, 2004
Investigation of Charlotte Uranium Mine, Byram Township, Sussex County, February 2004
ISCORS Assessment of Radioactivity in Sewage Sludge:
Radiological Survey Results and Analysis, November 2003
Modeling to Assess Radiation Doses, February 2005
Recommendations on Management of Radioactive Materials in Sewage Sludge and Ash at Publicly Owned Treatment Works, February 2005
A Study of Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) at a New Jersey POTW, January 2005
A Review of "Understanding Patterns and Trends of Radioactive Strontium-90 in Baby Teeth of New Jersey Children with Cancer: A Report to the New Jersey State Department of Health and Senior Services", September, 2005

PUBLICATIONS

Amidon, T., Stern, R., and Goodman, J., *A Pathways Analysis Approach to Developing Remediation Standards for Radioactively Contaminated Soils,* in Contaminated Soils, Volume 4, Kostecki, P. and Calabrese, E. editors, 1999.
Goodman, J., New Jersey and MARSSIM: Perfect Together (Well, Almost). *Health Physics*. 84(6) Supplement 3, June 2003
Bastian, R. et al, Radioactive Materials in Biosolids: National Survey, Dose Modeling, and Publicly Owned Treatment Works (POTW) Guidance, *Journal of Environmental Quality* 34:64-74, 2005.
Wolbarst, A.B.et al, Radioactive Material in Biosoilds: Dose Modeling. *Health Physics*. 90(1), January 2006

PRESENTATIONS

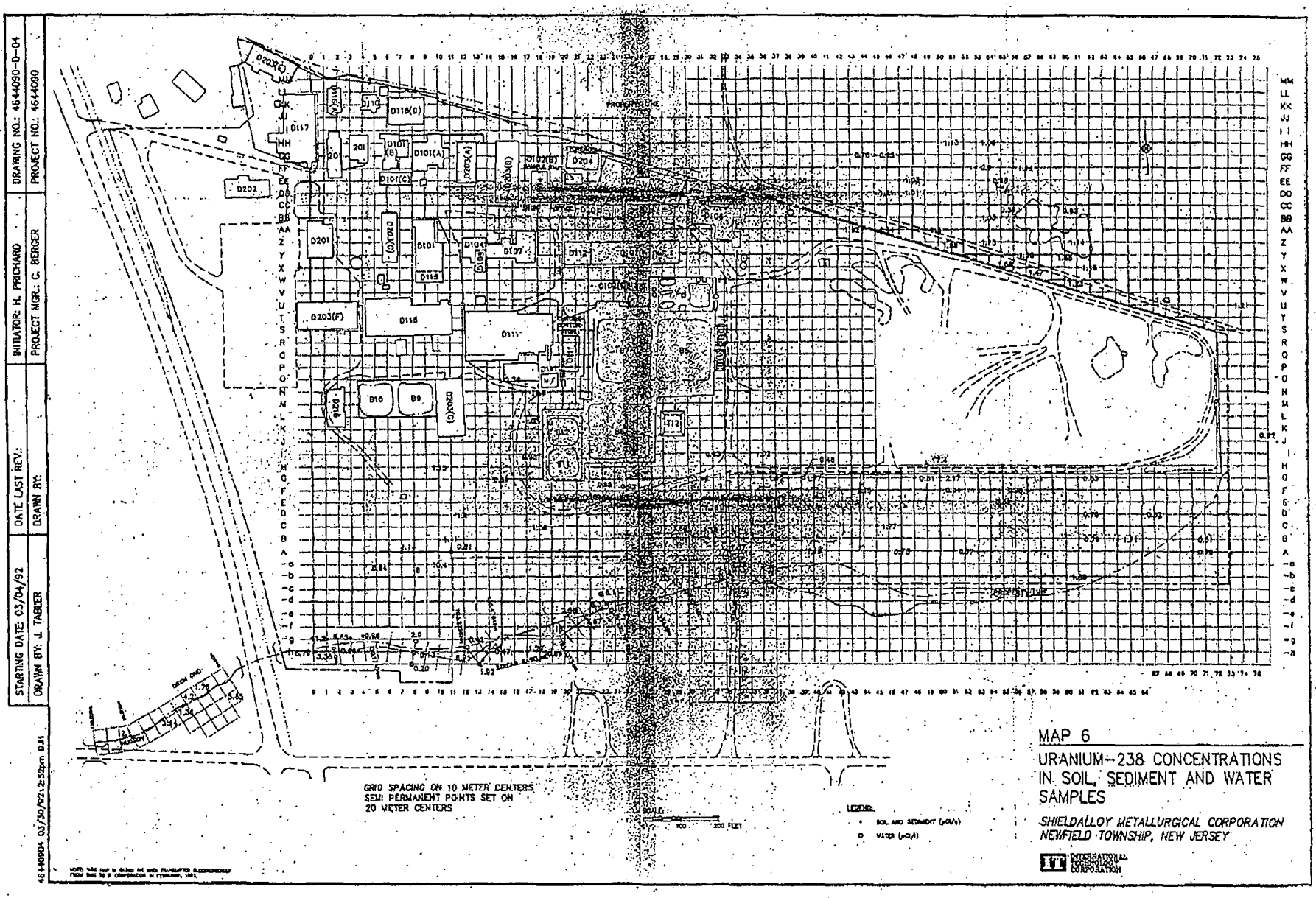
Ingestion Pathway Planning in NJ and the Impact on a State Radiation Laboratory, Health Physics Society, Boston, MA, July, 1988.
Implementation of NJ Soil Remediation Standards for Radioactively Contaminated Sites, Health Physics Society, Philadelphia, PA, June, 1999.
ISCORS Update on Sewage Sludge, Conference of Radiation Control Program Directors Mid-Atlantic Meeting, Atlantic City, NJ, October, 2003
Cleaning Up the BOMARC Site, from Missile Maidens to MARSSIM NJ Chapter of the Health Physics Society, March, 2005
Implementation of ISCORS Guidance Documents: New Jersey's Experience, ISCORS Principals, Washington D.C., March 2005

AWARDS

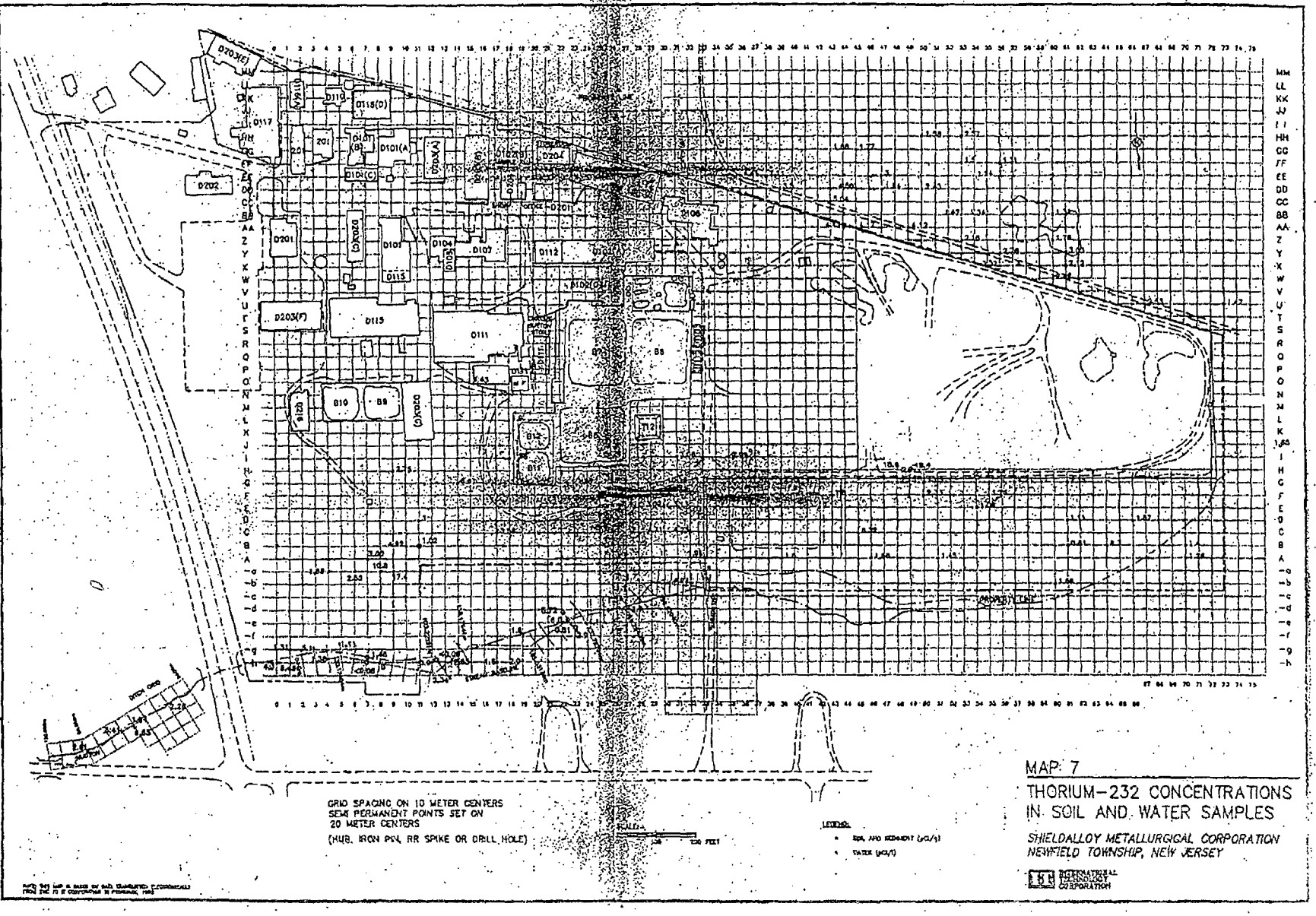
Appreciation Award in Recognition of Outstanding Achievement as a member of the Tom's River Working Group, June 1999
Professional Achievement Award for assistance to the Drinking Water Quality Institute in developing a Radium-224 in water standard, April, 2003

REFERENCES

Available upon request


STARTING DATE: 03/04/92
DRAWN BY: J. TABER
DATE LAST REV.:
DRAWN BY:
INITIATOR: H. PRICHARD
PROJECT MGR.: G. BERGER
DRAWING NO.: 4644090-D-04
PROJECT NO.: 4644090
4644090A 03/30/92 12:32pm DJ1
GRID SPACING ON 10 METER CENTERS
SEMI PERMANENT POINTS SET ON
20 METER CENTERS
SCALE:
100 200 FEET
LEGEND
SOIL AND SEDIMENT (pCi/g)
WATER (pCi/l)
MAP 6
URANIUM-238 CONCENTRATIONS IN SOIL, SEDIMENT AND WATER SAMPLES
SHIELDALLOY METALLURGICAL CORPORATION
NEWFIELD TOWNSHIP, NEW JERSEY
INTERNATIONAL TECHNOLOGY CORPORATION

STARTING DATE: 03/06/92	DATE LAST REV.:
DRAWN BY: S. CARDWELL	DRAWN BY:
INITIATOR: H. PRICHARD	DRAWING NO.: 464409-D-03
PROJECT MGR.: C. BERGER	PROJECT NO.: 464409



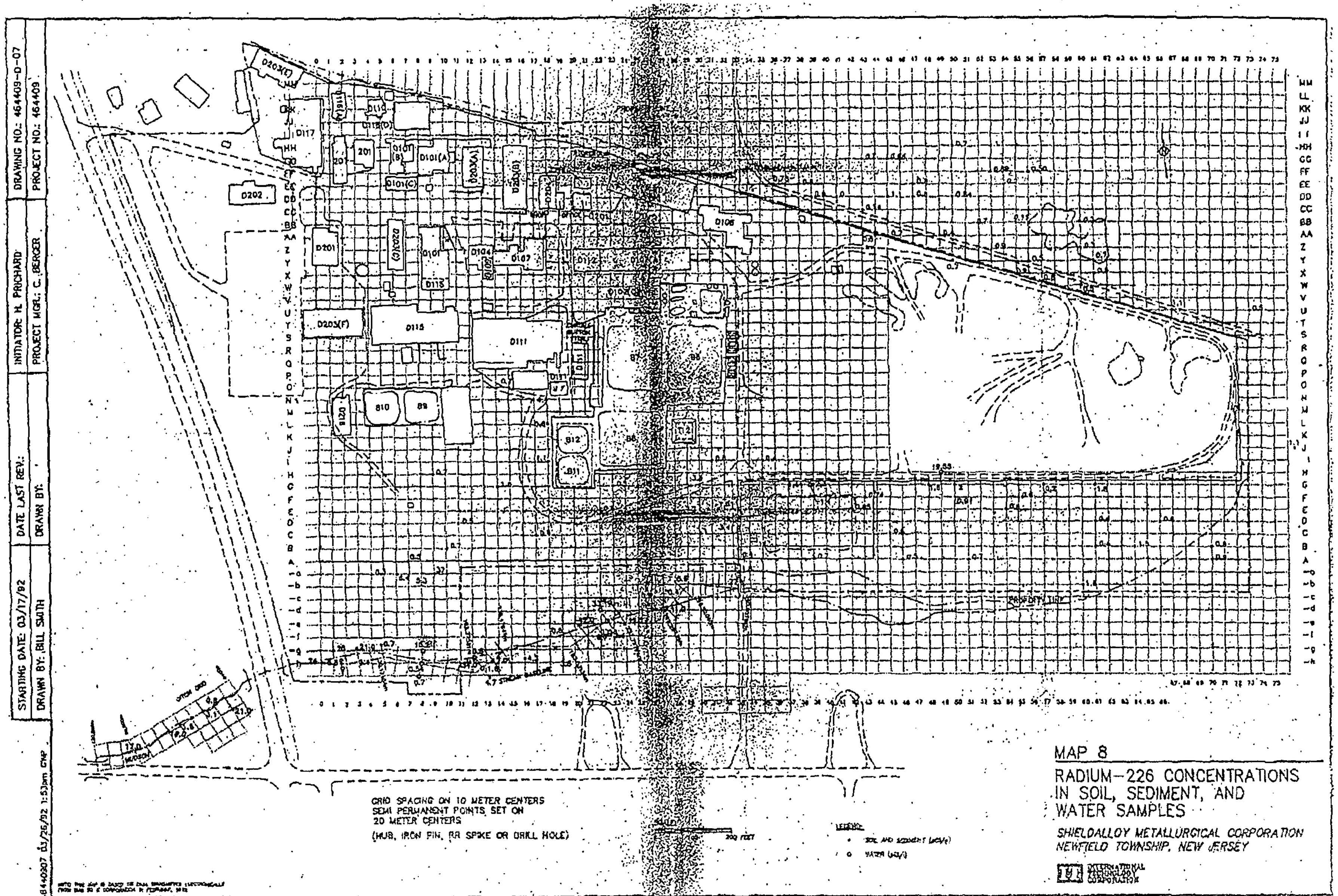
MAP: 7

THORIUM-232 CONCENTRATIONS IN SOIL AND WATER SAMPLES

SHIELDALLOY METALLURGICAL CORPORATION
NEWFIELD TOWNSHIP, NEW JERSEY

IT INTERNATIONAL TECHNOLOGY CORPORATION

464409D3 03/28/92 1:24pm D4H


DRAWING NO.: 464409-D-07
PROJECT NO.: 464409
INITIATOR: H. PRICHARD
PROJECT MGR.: C. BERGER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 03/17/92
DRAWN BY: BILL SMITH
GRID SPACING ON 10 METER CENTERS
SEMI PERMANENT POINTS SET ON
20 METER CENTERS
(HUB, IRON PIN, RR SPIKE OR DRILL HOLE)
200 FEET
LEGEND:
MAP 8
RADIUM-226 CONCENTRATIONS
IN SOIL, SEDIMENT, AND
WATER SAMPLES
SHIELDALLOY METALLURGICAL CORPORATION
NEWFIELD TOWNSHIP, NEW JERSEY